

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : MITSUBISHI ELECTRIC CORP

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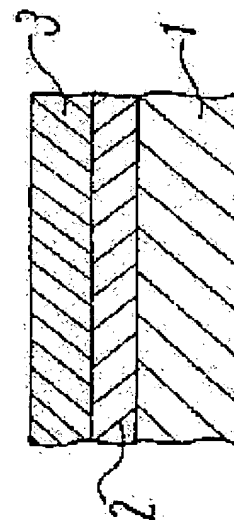
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## (54) PRODUCTION OF INFRARED RAY DETECTING BASE MATERIAL

(57)Abstract:

PURPOSE: To improve performance by growing a buffer layer in a vapor phase on a CdTe substrate inclined in the face bearing at a specific angle.

CONSTITUTION: The CdTe substrate 1 inclined in the face bearing in a 2 to 10° range from a (100) direction is placed in the substrate heating section within a vapor growing device and after the substrate heating part is heated in hydrogen flow, gaseous raw materials, such as dimethyl cadmium and dimethyl tellurium, are supplied and are epitaxially grown to form the buffer layer 2. Gaseous IR ray detecting materials, such as dimethyl cadmium, diethyl tellurium, and Hg, are supplied onto this buffer layer 2 and are epitaxially grown to form the IR ray detecting material layer 3.



## LEGAL STATUS

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PR - JP19900324273 19901126

TI - Prepn. of infrared detection material with improved performance - by epitaxial growth on cadmium telluride baseplate having inclined planar orientation

IW - PREPARATION INFRARED DETECT MATERIAL IMPROVE PERFORMANCE EPITAXIAL GROWTH CADMIUM TELLURIDE BASEPLATE INCLINE PLANE ORIENT

PA - (MITQ ) MITSUBISHI ELECTRIC CORP

PN - JP4193793 A 19920713 DW199234 C30B25/18 006pp

IC - C30B25/18 ; C30B29/48

AB - J04193793 A buffer layer is formed over a CdTe baseplate with an inclined planar orientation at 2 to 10 deg.C. Over this buffer layer is grown a layer of infrared detector material through an epitaxial growth.

- ADVANTAGE - Improved performance due to the specified inclination.
- In an example, CdTe baseplates with orientations off the (100) direction were used for the growth of a layer of Hg<sub>1-x</sub>CdxTe. A buffer layer of CdTe was formed preliminarily through MOCVD (metallorganic chemical vapour deposition) with feeds of dimethylcadmium and diethyl tellurium. Then the epitaxial growth of Hg<sub>1-x</sub>CdxTe was carried out by feeding Hg in addition to the Cd and Te cpd. employing H<sub>2</sub> as the carrier gas (Dwg.0/4)

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- CONSTITUTION: The CdTe substrate 1 inclined in the face bearing in a 2 to 10 deg. range from a (100) direction is placed in the substrate heating section within a vapor growing device and after the substrate heating part is heated in hydrogen flow, gaseous raw materials, such as dimethyl cadmium and dimethyl tellurium, are supplied and are epitaxially grown to form the buffer layer 2. Gaseous IR ray detecting materials, such as dimethyl cadimium, diethyl tellurium, and Hg, are supplied onto this buffer layer 2 and are epitaxially grown to form the IR ray detecting material layer 3.